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ABSTRACT

This study was designed to assess the effectiveness of the Teacher Checklist For Screening Kindergarten and First Grade Gifted Candidates in predicting gifted potential, i.e., a Wechsler Intelligence Scale for Children-Revised (WISC-R) IQ score of 130 or above. The instrument is currently used to pre-screen kindergarten and first grade children before being given the WISC-R, a requirement for admission to LEEP (Learning Enrichment Experiences Program). A total of 38 Ss, 19 per group, were included in the study. Two dichotomous groups based on WISC-R IQ scores were used: 100-124 and 131-152. The null hypothesis, i.e., no relationship exists between checklist items and IQ scores, was tested using phi-coefficient and chi-square. Results indicated no significant relationship between any checklist item and IQ score and no significant relationship between number of items checked by teachers and IQ scores. However, the instrument as a whole appears able to identify children with gifted potential over 50% of the time which is respectable in view of the children's young age and higher number of expected false positives. (Author/CL)

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A STUDY OF THE EFFECTIVENESS OF THE TEACHER CHECKLIST FOR SCREENING KINDERGARTEN AND FIRST GRADE GIFTED CANDIDATES IN PREDICTING GIFTED POTENTIAL

by

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Abstract

This study was designed to assess the effectiveness of The Teacher Checklist For Screening Kindergarten and First Grade Gifted Candidates in predicting gifted potential, i.e., a WISC-R IQ score of 130 or above. The instrument is currently used in the West Chester Area School District to pre-screen kindergarten and first grade children before being given the WISC-R, a requirement for admission to LEEP (Learning Enrichment Experiences Program). A total of 38 Ss, 19 per group, were included in the study. Two dichotomous groups based on WISC-R IQ scores were used: 100-124 and 131-152. The null hypothesis, i.e., no relationship exists between Checklist items and IQ scores, was tested using phi-coefficient and chi-square. Results indicated no significant relationship between any Checklist item and IQ score nor between number of items checked by teachers and IQ scores. However, the instrument as a whole appears able to identify children with gifted potential over 50% of the time which is respectable in view of the children's young age and higher number of expected false positives. Further research is necessary to assess the instrument's sensitivity to gifted under-achievers of various types.

TABLE OF CONTENTS

Section

I THE PROBLEM 1

A. Statement of the Need 1
B. Definition of Terms 2
C. Rationale 3
D. Limitations of the Study 4
E. Hypothesis to be Investigated 4

II RELATED LITERATURE 5

A. Characteristics of Young Gifted Children 5
B. Selected Issues in the Identification of Gifted Children 7
C. Gifted Underachievers 9
D. Brief Description of LEEP 12
E. History of the Teacher Checklist for Screening Kindergarten and First Grade Gifted Candidates 13
F. WISC-R as a Method of Assessing Intelligence in Young Children 13

III METHODOLOGY 15

A. Selection of the Sample 15
B. Sources of Data 15
C. Statistical Analysis of Data 16

IV FINDINGS OF THE STUDY 18

A. Hypothesis Investigated 18
B. Additional Findings 19

V DISCUSSION OF THE FINDINGS 21

A. Conclusions 25
B. Suggestions for Further Study 25
C. Postscript 26

VI SELECTED BIBLIOGRAPHY 27

SECTION I

THE PROBLEM

While the entire history of identifying and educating gifted children has been characterized by long and short-term philosophical and practical controversies, one of the areas that has been most difficult to resolve has been the identification of young gifted children. This situation is in part due to an inadequate research base upon which to build a consistent foundation of information. Instead, researchers persist in conducting their own separate investigations so that accurate comparisons of often conflicting results obfuscates any clarity temporarily achieved.

Another aspect of gifted education becoming more noticeable in this current era of strained educational resources is the issue of accurate identification of gifted children within efficiency parameters involving time and cost analyses. When these criteria are applied specifically to children in kindergarten and first grade, the goal is clear but the process is not.

A. Statement of the Need

Since any identification procedures used in admitting children to gifted programs entail considerable time and resources by professional personnel, it is essential that the screening procedures used to recommend children for additional testing yield a respectable return on the number of children actually qualifying for gifted programs. This view is supported by Syphers who states, "Economical use of psychological testing services can be promoted by proper screening methods" (Syphers, 1972, p. 7).

This paper will, therefore, focus on the screening instrument currently used for referring kindergarten and first grade children in the West Chester Area School District as possible candidates for the Learning Enrichment Experiences Program (LEEP). In an interview with the current director of gifted education in West Chester, the need for investigating the screening

instrument used with K and first grade children was given high priority in that many more children were being referred by teachers for testing than were being accepted into the program. Also, many of the children tested in K and first grade who are not accepted into LEEP are again referred in later grades and do obtain the required IQ scores for acceptance into LEEP.

The procedure for admittance into LEEP requires that all children referred using this 14-item Checklist must receive at least 10 checked items before being given the WISC-R on which they must score 130, although some latitude is allowed on this score for kindergarten and first graders. The WISC-R is an individual intelligence test which must be administered by a certified school psychologist and which takes at least one and a half hours to give and score.

Another issue of concern is the degree to which the Checklist may be omitting gifted children who are culturally different or underachievers. The need, then, is for an instrument which can effectively screen gifted children from middle and lower class environments whether or not they are achieving up to their potential. Because of the large percentage of black and Hispanic children currently served in West Chester schools, language in addition to cultural differences must also be considered.

B. Definition of Terms

Since the purpose of LEEP is to provide students with experiences designed to stimulate the development of higher level thinking skills, creative and divergent production, problem-solving skills, affective skills, and awareness skills which characterize gifted potential, the following definition of gifted children was chosen by the author (Gallagher, 1975, p. 10):

> Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas:

1. General intellectual ability
2. Specific academic aptitude
3. Creative or productive thinking
4. Leadership ability
5. Visual and performing arts
6. Psychomotor ability.

Within the cognitive domain, Getzels and Jackson (1962, p. 13) have distinguished between the highly intelligent child who "tends toward retaining the known, learning the predetermined, and conserving what is" and the highly creative child who "tends toward revising the unknown, exploring the undetermined, and constructing which might be." They also refer to giftedness in the psychological domain by describing the highly moral who "possess such qualities as adherence to ethics, beliefs in values, compassion, and identification with humanity" and the highly adjusted who are "able to perceive and understand their habitual behavior, and are considered existential that is, interested in the moment, in being rather than becoming" (p. 150).

In addition, the United States Commission on Education defines gifted and talented as (NAIS, 1978, p. 11):

> children or youth who have been identified at the preschool, elementary, or secondary level as 1) possessing demonstrated or potential intellectual, creative, or specific capability, or talent in the performing or visual arts, and 2) needing differentiated education or services beyond those being provided by the regular school system to the average student in order to realize these potentialities.

C. Rationale

Since the overall Teacher Checklist for Screening Kindergarten and First Grade Gifted Candidates presently in use is viewed by school personnel as questionable in its ability to distinguish between gifted and non-gifted kindergarten and first grade children, and therefore, also as preventing proper utilization of psychologists' time, the present study will attempt to assess the relationship of each item on the Checklist to the criterion for acceptance into LEEP which is a WISC-R IQ of 130 or more. If certain

items correlate highly with success on the WISC-R, perhaps a new weighting of the items can be undertaken. If no items correlate highly, other possibilities will then need to be discussed. The most significant reason, therefore, for conducting this study is to establish whether or not the present instrument is fulfilling the function for which it was created, i.e. to indicate or predict which children may possess gifted potential, regardless of their present achievement level. Gifted potential, in this case, means a WISC-R IQ score of 130 or above. Any subsequent steps depend on the answer to this question.

D. Limitations of the Study

The main limitation of this study is, ironically, also one which is perhaps necessitating the study, i.e. the absence of interrater reliability on teachers using the Checklist. This issue is further compounded in that the Checklist requires either a + or 0 response, rather than a scale for each quality measured. Therefore, it is almost certain that each item is perceived differently by each teacher and also the required minimum level of each ascribed trait may vary from child to child being rated by even the same teacher.

E. Hypothesis to be Investigated

Information to support or refute the following hypothesis will be sought in this study.

> No relationship exists between the items used by kindergarten and first grade teachers to screen children for LEEP and the WISC-R scores obtained after individual testing based on this referral.

SECTION II

RELATED LITERATURE

A. Characteristics of Young Gifted Children

The answer to "what are gifted children really like?" depends on one's original definition of giftedness. Martinson (1972, p. 81) described a study of over 1000 elementary gifted children in which the average performance of kindergarten gifted pupils was comparable to that of second graders. However, the challenge to educators is to develop a system that is sophisticated enough to identify and enhance giftedness in all its varied manifestations. Figure 1 presents a summary of the number of children from average communities who exhibit high IQ levels (Syphers, 1972, p. 5).

Figure 1

Number of Pupils	Stanford-Binet IQ Level
3 per 100	130
1 per 100	137
1 per 1,000	150
1 per 10,000	160
1 per 100,000	168
1 per 1,000,000	180

The following lists of characteristics of gifted children within each talent area were compiled in 1977 by Raymond Grinter, director of the McKendree College Area Service Center for Educators of Gifted Children in Lebanon, Illinois. While not conclusive, they at least indicate the different kinds and degrees of giftedness that may be manifested in young children (NAIS, 1978, pp. 13-16).

General Intellectual Ability

1. Is an avid reader
2. Very alert, rapid answers with a wide range of interests and curiosity
3. Is venturesome, eager to do new things
4. Tends to dominate peers or situations

6. Resourceful--can solve problems by ingenious methods
7. Creative in thoughts, new ideas, seeing associations, innovations
8. Has the capacity to look into things and be puzzled
9. Is involved with many exploratory types of activities
10. Reveals originality in oral and written expression
11. Is perceptually open to his environment
12. Displays a willingness for complexity
13. Shows superior judgment in evaluating things and is a good guesser
14. Retains and uses information which has been heard or read
15. Uses a large number of words easily and accurately
16. Asks many questions of a provocative nature
17. Has a power of abstraction, conceptualization, synthesis, cause-effect relations
18. Has a liking for structure, order, and consistency
19. Has a power of concentration, an intense attention that excludes all else
20. Is persistent and independent
21. Has a high energy level

Specific Academic Aptitude (Cognitive Domain--Highly Intelligent)

1. Has a long attention span
2. More mature in the ability to express himself through the various communication skills
3. Reaches higher levels of attentiveness to his environment
4. Spends time beyond the ordinary assignments or schedule on things that are of interest to him
5. Is able to adapt learning to various situations somewhat unrelated to orientation
6. Possesses one or more special talents
7. Is adept in analyzing his own abilities, limitations, and problems
8. Has more emotional stability
9. Can judge the abilities of others
10. Has diverse, spontaneous, and frequently self-directed interests

Creative Thinking and Production (Cognitive Domain--Highly Creative)

1. Has the ability to be fluent in producing ideas and elaborating ideas
2. Has ability to make unusual associations between remote ideas
3. Has ability to be flexible in thinking patterns
4. Has ability to rearrange elements of thought
5. Has ability to visualize mentally
6. Has ability to tolerate ambiguity and uncertainty
7. Has ability to sense discontinuities and inconsistencies
8. Has ability to redefine elements of a task
9. Has ability to maintain autonomy of ideas
10. Has large number of ideas and solutions to problems
11. Is uninhibited in expressions or opinions; is sometimes radical, displays intellectual playfulness, fantasizes; imagines, concerned with adapting, improving, and modifying
12. Has keen sense of humor and sees humor in situations others do not see
13. Generally does not accept authoritarian pronouncements without critical examination

14. Asks many questions, often challenging the teacher and the textbook
15. Has much energy, which gets him into trouble at times
16. On special projects, shows unusual capacity for originality, concentration, and just plain hard work

Leadership (Psychological Domain--Moral)

1. Has ability to stimulate others
2. Has ability to recognize skills and abilities possessed by others
3. Has ability to interact with others easily
4. Has ability to recognize and state the goals and objectives of a group
5. Has ability to differentiate responsibility and coordinate work among several persons
6. Has ability to articulate ideas and listen to others
7. Has ability to state a group problem clearly and is asked for ideas and suggestions
8. Has ability to understand how groups function
9. Has ability to give directions clearly and effectively
10. Has ability to exercise responsibilities dependably
11. Has ability to play nonleadership roles and establish a mood within a group
12. Has ability to summarize
13. Has ability to perceive and articulate unstated feelings of a group
14. Has ability to support members of a group when needed
15. Has ability to get along with a wide variety of individuals
16. Is looked to by others when something must be decided

B. Selected Issues in the Identification of Gifted Children

While the current controversial issues in this area fill volumes, the following areas of concern are briefly mentioned as they relate to the problem being studied. Especially common is the criticism that standard IQ tests do not assess qualities such as creativity and that they fail to identify gifted children among culturally disadvantaged and bilingual groups resulting in unfair and inaccurate labeling. Such inadequacies, however, are largely characteristic of group measures which are not designed to test extremes in any form. Individual intelligence tests such as the Stanford-Binet have actually had very limited use in our schools (Syphers, 1972, p. 6).

Another issue is the tendency to concentrate testing in the upper grades because "older children need the special attention." In the Sypher article, Martinson refutes this fallacy reasoning that, "Because of his dependence on the teacher and the limited avenues for independent learning, a young

child is much more closely governed by classroom fare than an older child who has learned to substitute means for satisfying his needs. It is recommended, therefore, that individual testing be concentrated in the primary grades with retesting and pick-up testing of late bloomers or newcomers at other grade levels as the psychologist's time permits" (Syphers, p. 10).

Renzulli and Smith (1977, p. 516) compared two approaches to identifying gifted students, the traditional and the case study. Their findings are summarized in Figure 2 (p. 515). In addition, the case study approach appeared to be more sensitive to identifying academically able students in schools serving minority populations.

Figure 2

Summary of Number of Students Screened and Selected as Gifted by Means of Traditional and Case Study Approaches

Type of Approach	No. of students screened	No. of students selected	Ratio of screened to selected	Cost per selected student (in dollars)	Hours spent per selected student
Traditional					
District 1	225	31	7.26:1	91.70	9.84
District 2	220	24	9.17:1	155.05	14.96
District 3	221	40	5.53:1	112.62	11.38
Mean	222	31.67	7.32:1	119.79	12.06
Case Studies					
District 4	217	25	8.68:1	55.46	5.58
District 5	308	28	11.00:1	35.36	3.79
District 6	233	45	5.18:1	31.51	3.37
District 7	267	51	12.29:1	[a]	17.54
Mean[b]	256.25	37.25	9.29:1	40.78	7.57

[a]Could not be calculated because information on salaries and overhead costs was not submitted.
[b]Mean costs are calculated on the basis of three districts.

Reliability of teacher assessments is another area relevant to the present investigation. In Terman's survey of gifted children entering

school at 6½ years, there was "comparatively little correspondence between each child's actual merits and the amount or rate of promotion in school; indeed, the teacher's assessments proved to be amazingly unreliable" (Burt, 1975, p. 161). Freeman reported that teachers are not reliable sources of pupil assessment in that they are often influenced by the child's appearance or the status of her parents. In addition, Freeman reported on a study conducted in Pittsburgh where only 41 of the 91 children with Stanford-Binet IQs of 136+ were nominated by their teachers as gifted while many referred to as gifted by teachers scored in the average intelligence range on the Binet. Freeman found that gifted children who do not conform to teacher expectations and are not achieving well can often be omitted from referrals (Freeman, 1979, p. 97).

A concluding thought regarding one of the underlying problems in gifted education in the United States was alluded to by Burt who found that in London schools, the divergence between the child's actual ability and his school attainments, though often striking, was "by no means so wide or so general as it was in the American schools." His concern is with "the difficulties caused for those concerned with the education of the able minority ... by a policy ... which attempts to provide for the needs of children with varying abilities ... by simply modifying or supplementing a central core of studies" (Burt, 1975, p. 162). Burt's implied assumption that democracy, often falsely interpreted to mean everyone must be "equal," i.e. have equal abilities, is especially harmful to gifted children. Also, the attitude that to be different is a "deviation" is even found among teachers and was ironically echoed by the federal government by setting up the Office of the Gifted and Talented as part of the Bureau of Education for the Handicapped (Maeroff, 1977, p. 169).

C. Gifted Underachievers

Whitmore reported that primary teachers had greater difficulty identifying pupils for referral when the principle criterion for selection was

advanced achievement in most or all areas of instruction because primary age children are limited in the ways they can excel before basic concepts and skills have been taught to them. She, therefore, believes that K-primary teachers must be helped to identify intellectual giftedness in children through the use of behavioral indicators not bound to high achievement on standardized tests (Whitmore, 1980, p. 76).

Many myths about gifted children were dispelled in a fascinating attempt by the Cupertino Union Elementary School District in California to identify children in kindergarten and first grade who might be gifted. As many as 25% of the children obtaining IQ scores in the gifted range were not recommended by their teachers for reasons including immature social and emotional behavior, lack of intellectual drive or striving to achieve, less productivity than other classmates, and a tendency to waste time and not follow directions. Even when confronted with the children's Binet results, these teachers recommended the children remain in regular classes. The most difficult group of gifted children to identify, which also had the smallest number of referrals, was the withdrawn group who did not reveal their abilities or feelings through self-expression or active class participation, especially when withdrawal was accompanied by learning disabilities related to perceptual-motor skills. Most of the Cupertino gifted underachievers scored below grade level on standardized tests of basic skills (reading, language, arithmetic) and about one half had been retained or were being considered for retention in the same grade for the subsequent school year. The teachers perceived the problems of these children as primarily related to student attitude and effort, while the children suffered an increasing loss of self-esteem each year (Whitmore, 1980, pp. 85-86).

Two basic patterns of student behavior identified in the Cupertino gifted underachievers were aggression (75%) and withdrawal (25%). Perhaps many more youngsters who live out the withdrawal pattern are not referred

because they are not interfering with classroom operation. About 90% of the children referred were males. Since male behavior has typically included a high aggressive component whereas females typically have exhibited more withdrawal, the low frequency of female referrals may be connected with the cultural expectations and pressures upon the two sex roles. These findings raise the serious question of "how many chronic underachievers exist among the highly gifted population, sliding by with average grades and spending a good amount of time in withdrawal" (Whitmore, 1980, p. 89).

Some of the common characteristics of gifted underachievers are included in Figures 3 and 4 (Whitmore, 1980, p. 88).

Figure 3

The most common characteristics of gifted underachievers

IQ of 140+ on Stanford Binet or WISC

School work has been rather consistently incomplete

Vast gap between qualitative level of oral and written work

Test phobic, poor test results

Profound interest in a single area in which she is "expert"

School phobia or complete disinterest in attendance and participation

Very low self-esteem and unhealthy self-concept producing:
- difficulties coping emotionally
- lack of self confidence
- inferiority feelings

Sincere belief that no one likes her (projection of self-hate)

A very autonomous spirit, quite focused on self and resistant to influence

Inability to function constructively in a group of any size

Wide range of interests, mostly in the sciences and arts

Tendencies to continually set goals and standards too high; e.g. unrealistic standards of complexity or aspirations for realism in art

No apparent satisfaction from repeated demonstration of acquired skills-e.g., math facts and cursive writing-tasks that do not require higher levels of thinking or creativity

Not motivated by the usual devices-e.g., teacher enthusiasm, group interests, a "stimulating environment," and often not by praise or points awarded for "good behavior"

Figure 4

Additional common characteristics of gifted underachievers

Lack of academic initiative (as defined by school)

A rigidity of interest, which translates into "I want to learn about the things I'm interested in!"

Distractibility-inability to focus and to concentrate efforts constructively; a lack of selective perception when presented with multiple stimuli

General hyperactivity, hypertensive behavior; several youngsters were placed on drug treatment by doctors diagnosing them as hyperactive

General immaturity in all areas-physically, socially, and emotionally

Very often young (fall babies)

Chronic inattentivenss-"just cannot listen and absorb"

Psychomotor inefficiency, most often a visual-perception handicap

Tendency to attribute success and failure to external control, believing she had no personal ability to achieve "success" in the classroom setting

Malingering, hypochondria, frequent illness resulting in excessive absences from school

D. Brief Description of LEEP

The purpose of LEEP was previously described in Section I. The primary elementary program is designed to prepare the younger student for the increasingly independent, in-depth, subject specific orientation of the later levels of the gifted program continuum within the West Chester Area School District. Pupils come to LEEP one day per week. On the basis of a student's expressed interest, demonstrated talent(s) and aptitude(s), and teacher observations, a student is assigned to a theme or general area of study which he/she explores within the frame of reference of each of the major disciplines; i.e. Language Arts, Mathematics, Science, and Social

Science. Examples of themes may include Animals, Architecture, Careers, Environment, Government, Graphic Arts, Oceans, Space, West Chester, etc. A student spends approximately four weeks within each discipline and many study two themes during the year, although structural revisions of this plan are made from year to year (LEEP, 1979-80).

E. History of the Teacher Checklist for Screening Kindergarten and First Grade Gifted Candidates

The present Checklist was constructed in 1976 as a modified version of the Renzulli scale. The goal was to devise an instrument that would help teachers identify kindergarten and first grade children who might have gifted-creative potential regardless of achievement level. The items were limited to fourteen to avoid encumbering teachers with extensive paper work and a rating scale for each item was not included in order to avoid difficulties with interrater reliability. The cut-off for screening was set at ten out of fourteen items as recommended by Renzulli.

F. WISC-R as a Method of Assessing Intelligence in Young Children

Although not the main focus of this study, the choice of the WISC vs. the Binet as the individual intelligence test to determine giftedness is not without disagreement. Freeman prefers the Binet over the WISC because: 1) the Binet measures children more precisely in the higher ranges of ability, 2) it (Binet) is less likely to discriminate between the sexes on grounds of general ability, and 3) it is the most widely used test of intelligence with the longest history (Freeman, 1979, p. 107).

Sattler reported on a survey of the preferences of school psychologists in California conducted by Weise, 1960, in which the Stanford-Binet was preferred to the WISC in testing for giftedness and for mental retardation in K-second grades. Ross (1959) also preferred the Binet to the WISC for children under eight years of age because the Binet tests between 2 and 8 years are more interesting to children, whereas the WISC directions are

somewhat awkward to use with children under 8 years. However, Osborne (1972) believes the WISC is the better instrument for use with children 6-13 years of age. In addition, the WISC is easier to administer than the Binet and the IQ breakdown into Verbal and Performance components is often helpful, especially with exceptional children (Sattler, 1974, pp. 413-414).

At this time no clear-cut conclusions may be drawn from the conflicting opinions held by various researchers. However, it is equally apparent that the two areas of the WISC most frequently questioned in the literature are the results obtained for children 6-8 years of age and children in the extreme ends of the scale, both applicable to the children in the present study.

SECTION III

METHODOLOGY

A. Selection of the Sample

An inspection of the files for kindergarten and first grade children who had been screened for admittance into the 1980-81 LEEP program yielded a total number of 103 children. However, several of the children in this group had been screened using the unmodified Renzulli scale and were, therefore, discarded from the sample leaving a total of 45 subjects. An additional 7 children were discarded to obtain two dichotomous groups of children according to WISC-R Full Scale IQ scores: 100-124 and 131-152. The chance that these groups overlap in any way is approximately 1 out of 100.

B. Sources of Data

Two sets of data were extracted for each subject: WISC-R scores and the Teacher Checklist for Screening Kindergarten and First Grade Gifted Candidates. This Checklist is composed of 14 items and appears in Figure 5. Although the WISC-R subtest scores were also obtained, only the Full Scale IQ scores were used in the final comparison.

Figure 5

WEST CHESTER AREA SCHOOL DISTRICT

TEACHER CHECKLIST FOR SCREENING KINDERGARTEN AND FIRST GRADE GIFTED CANDIDATES

Pupil's Name _____ Birthdate _____

School _____ Teacher _____ Grade _____

Date _____

PART A

Below is a list of characteristics often observed in gifted children. Please indicate with a check "✓" whether the student possesses the characteristic to a marked degree, relative to the other students. In the event the

characteristic may not be present because of background, experiential, or cultural factors, please put an " 0 " in the space next to the characteristic.

_____ 1. Large vocabulary used fluently and accurately.

_____ 2. Has original ideas in one or more areas.

_____ 3. Asks many penetrating questions. Is interested in cause and effect (e.g. "WHY?).

_____ 4. Very observant.

_____ 5. When interested in a topic, may spend excessive time on the topic and not go onto new activities with the rest of the class.

_____ 6. Spends time on self-initiated activities.

_____ 7. Is curious about activities, people, and things outside of his/her immediate experience or environment.

_____ 8. Gives refreshing "twists" to old ideas.

_____ 9. Enjoys problems, puzzles, and trick questions.

_____ 10. Shows little interest in routine procedures and drills.

_____ 11. Other students tend to turn to him/her for companionship, ideas, and/or suggestions.

_____ 12. Has outstanding talent in a special area(s) such as art, music, rhythms, dramatics.

_____ 13. Able to express himself/herself well through verbal or nonverbal means.

_____ 14. Likes to identify new ways of doing things.

C. Statistical Analysis of Data

This study was designed to determine the effectiveness of the Teacher Checklist in predicting which children have gifted potential, i.e. score at 130 or above on the WISC-R. More specifically, the objective was to assess the degree and direction of correlation between each of the 14 items used by teachers to pre-screen K and first grade children for LEEP and the actual WISC-R scores obtained on the basis of teacher referral. The level of significance was set at .05.

The hypothesis was analyzed in the following way: 1) A phi-coefficient

was used to determine the degree and direction of correlation between the frequency with which each item was checked and the IQ group to which the subjects belonged; and 2) A chi-square analysis as a function of phi was then used to test the null hypothesis.

SECTION IV

FINDINGS OF THE STUDY

The purpose of this study was to assess the effectiveness of the Teacher Checklist for Screening Kindergarten and First Grade Gifted Candidates in predicting WISC-R IQ scores of 130 and above which are required for entrance into LEEP. The results of this study were obtained through the statistical procedures of phi-coefficient and chi-square described in Section III.

A. Hypothesis Investigated

No relationship exists between the items used by kindergarten and first grade teachers to screen children for LEEP and the WISC-R IQ scores obtained after individual testing based on this referral.

The results obtained using the phi coefficient and chi square, as shown in Table I, clearly indicate that no item on the Teacher Checklist significantly correlates with IQ as measured on the WISC-R. A chi square of 3.841 with 1 df is required for significance at the .05 level. Of special interest is the large number of items that are negatively correlated, although not at significant levels, with high IQ scores.

Table 1 -- Phi Coefficient Correlations and Chi Square Analyses of Frequency of Checklist Items Scored by Teachers and IQ Test Results

Checklist Item No.	Frequency for 131-152 Group	Frequency for 100-124 Group	Phi	Chi-Square
1	18	16	.171	1.117*
2	18	17	.097	.361
3	16	13	.185	1.310*
4	19	19	0	0
5	14	15	-.061	.145
6	16	17	-.077	.230
7	17	18	-.097	.361
8	14	13	.058	.127
9	17	18	-.097	.361
10	9	10	-.052	.105
11	12	15	-.174	1.151*

Table 1 Continued

Checklist Item No.	Frequency for 131-152 Group	Frequency for 100-124 Group	Phi	Chi-Square
12	10	9	.052	.105
13	19	17	-.078	.235
14	15	18	-.233	2.072*

*Probability greater than .30 level that correlation not due to chance.

Although none of the items significantly correlated with IQ scores obtained on the WISC-R, the two items on the Checklist that were most highly related to IQ scores were #s 1 and 3, i.e. "Large vocabulary used fluently and accurately," and "Asks many penetrating questions. Is interested in cause and effect (e.g. Why?)."

The two items most negatively related to IQ scores were #s 11 and 14, i.e. "Other students tend to turn to him/her for companionship, ideas and/or suggestions," and "Likes to identify new ways of doing things." Item 11 contains heavy social content while #15 elicits information on divergent thinking. Neither of these characteristics falls within the domain of abilities sampled on the WISC-R.

B. Additional Findings

Table 2 contains the mean, median, and mode of IQ scores obtained within each group of children. Results show that students recommended but not accepted for LEEP generally fell into the High Average (Bright) classification as described in the WISC-R manual while children accepted into LEEP were in the Very Superior range which is two intelligence classifications or two standard deviations above the High Average Level as seen in Figure 6 (Wechsler. 1974, p. 26).

Figure 6

WISC-R Intelligence Classifications

IQ	Classification	Percent Included Under Theoretical Normal Curve
130 and above	Very Superior	2.2
120-129	Superior	6.7
110-119	High Average (Bright)	16.1
90-109	Average	50.0
80-89	Low Average (Dull)	16.1
70-79	Borderline	6.7
69 and below	Mentally Deficient	2.2

Table 3 indicates that there was no difference in the number of items checked for children in either group. Part of this finding may be due to instructions on the Checklist telling teachers to only submit those lists on which 10 or more items were applicable to the child in question. However, in practice, teachers checked less than 10 items for over 20% of the children in each group.

Table 2 -- Comparison of Range of IQ Scores Present for Gifted and Non-Gifted Samples

Group IQ Range	Mean IQ	Median IQ	Mode
131-152	140	140	139.5
100-124	114.2	118	118

Table 3 -- Comparison of Number of Checklist Items Scored for Gifted and Non-Gifted Samples

Group	Mean	Median	Mode
Gifted	11.26	12	12
Non-Gifted	11.3	12	12

SECTION V

DISCUSSION OF THE FINDINGS

This section will explore some of the less obvious forces that, while subtle, nevertheless are important in attempting to conceptualise the goal of identifying young gifted children. These ideas will be combined to offer various interpretations of the findings and last, some suggestions for future directions will be offered.

The data presented in Table 1 suggest that no items on the Teacher Checklist are outstanding predictors of very high IQ scores. However, some unanswered questions beyond the scope of this paper that bear mentioning include: 1) Are the items themselves poor predictors of very superior intelligence or are the teachers' varying perceptions of the items neutralizing or nullifying any relationships that could exist?, 2) Is it possible each teacher has a preconceived idea of which children should attend LEEP and then subconsciously (à la Pygmalion in the Classroom) ascribes the traits on the Checklist to the child in greater degree to support this initial bias? In other words, the possibility exists that although the items did not appear to distinguish between the two groups, the high number of false positives may be due as much to teacher error as to item error.

It is also evident that children of High Average and Very Superior intelligence have many personality traits in common as illustrated in Table 3. However, the lack of a rating scale for each trait as well as the need for a factor analysis of the items indicate that the results on a given Checklist are not as easily interpreted as would seem apparent. The items appear to contain a blend of cognitive, motivational, and idiosyncratic variables, which, if appropriately clustered and weighted, might yield more meaningful data.

All of the Checklist items appear at some point in the literature on

the gifted, although not necessarily together. Since children in both samples generally possessed at least high average intelligence, the Checklist does seem capable of screening bright children, but not exclusively the very superior children whose needs require special programming.

Another difficulty with the Checklist procedure is that many Very Superior children are socially intelligent enough to not appear seriously different from their peers. While peer pressure is not as powerful in K and first grade as in later elementary grades, superior children possess greater awareness of themselves and their environment and may adjust to the level of their peers thus preventing teachers from adequately evaluating their abilities.

Still another possible interpretation of the data in this study might be that giftedness is a state of being composed of many different, though complementary, parts. According to this perspective, gifted children possess both Very Superior intelligence and the personality characteristics on the Checklist, so that no correlation between the two aspects is warranted. The idea that "truly" gifted children possess both the Checklist traits and a 130+ IQ is at least plausible since the Checklist was designed to pick-up children exhibiting creative and special potential rather than high achievement. Also, in the younger grades, due to the uneven developmental levels, a higher number of false positives might be expected. Syphers states that, "If the screening is done with skill, one half of the children recommended for testing usually qualify" (Syphers, 1972, p. 7). Out of the 45 Ss whose teachers used the same Checklist, more than 50% were accepted for LEEP, thus indicating that the present situation is actually better than what might be expected.

While the method of identifying gifted children is unclear, the circularity contributing to this uncertainty is very clear. Gifted children, as we experience them today, are those children possessing the characteristics

we have ascribed to them. At the same time we are saying many other gifted children exist apart from our awareness still awaiting our expanded definition of them. However, since the bottom line in identifying children still is IQ and the controversy over the definition of intelligence is far from over, the prospects for a quick solution to defining and finding gifted children are not encouraging. Yet even within the current situation, Martinson's perspective is important to heed (Syphers, 1972, p. 7).

> The fact that all is not yet known about either intelligence or creativity should not prevent the use of the best means available to us. We cannot wait until the day when all is known about talents and abilities so that we can do an infallible job of identifying gifted children.

Therefore, the method of using behavioral indicators to infer the presence of a deeper trait, in this case--intelligence, is still very appropriate. If an alternative scale is desired for comparison with the present one, learning characteristics of gifted children (see Figure 7) as formulated by Seagoe in 1961 and reproduced by Syphers (1972, p. 10) might be easily converted into a ten-point scale for each item with 0 in the middle to encompass "two sides of the coin which are part of the riches of giftedness."

Figure 7

Some Learning Characteristics of Gifted Children

Characteristics	Concommitant Problems
1. Keen power of observation; naive receptivity; sense of the significant; willingness to examine the unusual.	1. Possible gullibility; social rejection; value system and its defense.
2. Power of abstraction, conceptualization, synthesis; interest in inductive learning and problem solving; pleasure in intellectual activity.	2. Occasional resistance to direction; rejection or omission of detail.

Characteristics	Concommitant Problems
3. Interest in cause-effect relations, ability to see relationships; interest in applying concepts; love of truth.	3. Difficulty in accepting the illogical.
4. Liking for structure and order; liking for consistency, as in value systems, number systems, clocks, calendars.	4. Invention of own systems, sometimes conflicting.
5. Retentiveness.	5. Dislike for routine and drill; need for early mastery of foundation skills.
6. Verbal proficiency, large vocabulary; facility in expression; interest in reading; breadth of information in advanced areas.	6. Need for specialized reading vocabulary early; parent resistance to reading; escape into verbalism.
7. Questioning attitude, intellectual curiosity, inquisitive mind; intrinsic motivation.	7. Lack of early home or school stimulation.
8. Power of critical thinking; skepticism, evaluative testing; self-criticism and self-checking.	8. Critical attitude toward others; discouragement from self-criticism.
9. Creativeness and inventiveness; liking for new ways of doing things; interest in creating, brainstorming, free-wheeling.	9. Rejection of the known, need to invent for oneself.
10. Power of concentration; intense attention that excludes all else; long attention span.	10. Resistance to interruption.
11. Persistent, goal-directed behavior.	11. Stubbornness.
12. Sensitivity, intuitiveness; empathy for others; need for emotional support and a sympathetic attitude; ego-involvement; need for courage.	12. Need for success and recognition; sensitivity to criticism; vulnerability to peer group rejection.
13. High energy, alertness, eagerness; periods of intense voluntary effort preceding invention.	13. Frustration with inactivity and absence of progress.
14. Independence in work and study; preference for individualized work; self-reliance; need for freedom of movement and action; need to live with loneliness.	14. Parent and peer group pressures and nonconformity; problems of rejection and rebellion.

A. Conclusions

Some tentative conclusions emerge on the basis of this brief study:

1. While no items on the Checklist correlate with IQ scores, the items as a group do tend to describe children of at least High Average intelligence; and over 50% of the time, they are capable of pointing to children with Very Superior Intelligence. In view of the children's young age and the expected higher number of false positives, the instrument seems to be performing its function of indicating which children might have gifted potential.
2. Since many of the K and first grade children not accepted into LEEP are again referred in later grades and do obtain the required IQ score, perhaps the Checklist is more effective than the WISC-R in indicating gifted potential in young children age 6-8 years.
3. The question of which children the Checklist is not picking up, i.e. underachievers and bilinguals, is not able to be answered with present data.

B. Suggestions for Further Study

1. Although perhaps not feasible, a method of corroborating the Checklist's ability to indicate gifted potential would be to allow all children referred in K and first grade to participate in LEEP for one year and to compare the academic performance of both groups at the year's end, each group based on obtained WISC-R scores before entering the program.
2. Although teachers are already overburdened, the addition of a Checklist for Identifying Gifted Underachievers seems necessary to determine if the present instrument is sensitive to this population. Items may be drawn from the data in Figures 3 and 4 and constructed to parallel the Renzulli format.

C. Postscript

Are the personal and societal gains worth the effort invested in the gifted?

> "For what is evil but good tortured by its own hunger and thirst?" (Gibran, 1969, p. 64).

SECTION VI

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